THE INVENTION CLAIMED IS:

1. A method for measuring jitter, comprising:
inputting a signal under test to generate signal transition locations;
latching a signal transition location using a sampling clock signal;
converting the signal transition location to a delay value;
converting the delay value to an edge position output; and
detecting a value of the edge position output.

2. The method of claim 1 further comprising filtering the edge position output prior to detecting a value of the edge position output.

3. The method of claim 1 further comprising adding a dither signal to the signal under test prior to inputting the signal under test to generate signal transition locations.

4. The method of claim 1 further comprising analyzing the edge position output to determine edge position movement in excess of a predetermined magnitude.

5. The method of claim 1 further comprising analyzing the edge position output to provide a root mean square value thereof.

6. A method for measuring jitter, comprising:
inputting a data signal under test to generate data signal transition locations;
latching a data signal transition location using a sampling clock signal;
converting the data signal transition location to a delay value;
converting the delay value to an edge position output using the sampling clock signal;
detecting peak-to-peak values of the edge positions; and
outputting the detected peak-to-peak values of the edge positions.

7. The method of claim 6 further comprising filtering the edge position outputs prior to detecting peak-to-peak values of the edge position outputs.

8. The method of claim 6 further comprising adding a dither signal to the data signal under test prior to inputting the data signal under test.

9. The method of claim 6 further comprising analyzing the edge position output to determine edge position movement in excess of a predetermined unit interval magnitude.

10. The method of claim 6 further comprising analyzing the edge position output to provide a root mean square value thereof.

11. Apparatus for measuring jitter, comprising:

a tapped delay line for generating signal transition locations therein from a signal under test inputted thereinto;

a sampling clock signal;

a sample register connected for latching a signal transition location therein in response to the sampling clock signal;

a priority encoder connected for converting the signal transition location to a delay value;

a converter connected for converting the delay value to an edge position output; and

a peak-to-peak detector connected for detecting values of the edge positions.

12. The apparatus of claim 11 further comprising a digital signal processing filter connected for filtering the edge position output prior to the peak-to-peak detector detecting values of the edge positions.

13. The apparatus of claim 11 further comprising a dither unit connected for adding a dither signal to a signal under test prior to the signal under test being inputted into the tapped delay line.

14. The apparatus of claim 11 further comprising an over-range detector connected for analyzing the edge position output to report edge position movement in excess of a predetermined magnitude.

15. The apparatus of claim 11 further comprising a block that:

performs root mean square measurement calculations; and

is connected for analyzing the edge position output to provide a root mean square value thereof.

16. Apparatus for measuring jitter, comprising:

a field programmable gate array carry chain;

a tapped delay line that is implemented in the field programmable gate array carry chain for generating data signal transition locations therein from a data signal under test inputted thereinto;

a sampling clock signal;

a sample register connected for latching a data signal transition location therein in response to the sampling clock signal;

a priority encoder connected for converting the data signal transition location to a delay value;

a converter for converting clock and delay to time values and connected for converting the delay value to an edge position output; and

a peak-to-peak detector connected for detecting and outputting peak-to-peak values of the edge positions.

17. The apparatus of claim 16 further comprising digital signal processing filters connected for filtering the edge position output prior to the peak-to-peak detector detecting peak-to-peak values of the edge positions.

18. The apparatus of claim 16 further comprising a dither unit connected for adding a dither signal to a data signal under test prior to the data signal under test being inputted into the tapped delay line.

19. The apparatus of claim 16 further comprising an over-range detector connected for analyzing the edge position output to report edge position movement in excess of a predetermined unit interval magnitude.

20. The apparatus of claim 16 further comprising a block that:

performs root mean square measurement calculations; and

is connected for analyzing the edge position output to provide a root mean square value thereof.